

REMARKS

This Amendment is being filed in response to the Final Office Action mailed February 19, 2010, which has been reviewed and carefully considered. Entry of the present amendment and allowance of the present application in view of the amendments made above and the remarks to follow are respectfully requested.

Claims 1-3, 5-17, 19 and 41-42 are pending in the application, where claims 4 and 18 have been currently canceled without prejudice, claims 20-40 had been previously canceled without prejudice, and claims 41-42 have been currently added. Claim 1 is independent.

Applicant respectfully requests the Examiner to acknowledge the claim for priority and receipt of certified copies of all the priority documents.

By means of the present amendment, the specification has been amended to correct a certain informality.

By means of the present amendment, claims 1, 12, 14 and 19 have been amended for non-statutory reasons, such as for better form. Such amendments to claims 1, 12, 14 and 19 were not made in order to address issues of patentability and Applicant respectfully

reserves all rights under the Doctrine of Equivalents.

In the Final Office Action, claims 1-19, 41 and 42 are rejected under 35 U.S.C. §103(a) over a publication entitled "A brief review of parallel magnetic resonance imaging", (Heidemann) or a publication "Anisotropic Water Diffusion in Macroscopically Oriented Lipid Bilayers Studied by Pulsed Magnetic Field Gradient NMR" (Wasterby) in view of a publication "Rotational Viscosity, Dynamic Phenomena, and Dielectric Properties in a Long-Chain Liquid Crystal: NMR Study and Theoretical Treatment" (Zahharov). Applicant respectfully traverses and submits that claims 1-19, 41 and 42, are patentable over Heidemann, Wasterby and Zahharov for at least the following reasons.

Heidemann is directed to increasing the speed of magnetic resonance imaging (MRI) using parallel MRI or pMRI. Heidemann is solely concerned with obtaining images.

Wasterby is directed to measuring the anisotropy of water diffusion in macroscopically oriented lipid bilayers.

Zahharov is directed to estimating rotational viscosities and analyzing dielectric properties in a long-chain liquid crystal using NMR relaxation theory.

It is respectfully submitted that Heidemann, Wasterby,

Zahharov and combination thereof, do not disclose or suggest the present invention as recited in independent claim 1 which, amongst other patentable elements, recites (illustrative emphasis provided):

introducing into the examination area magnetic particles ...

generating a magnetic field having a strength with a spatial profile such that there is produced in the examination area two part-areas including a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength than the low magnetic field strength; ...

evaluating the signals so as to obtain information about the change in the spatial distribution of the magnetic particles and about physical, chemical and/or biological state variables, wherein the physical, chemical and/or biological state variables include at least one of substance concentration, temperature, pressure, viscosity and pH; and

correlating the change in the spatial distribution of the magnetic particles in the examination area with at least one of a local concentration, temperature, pressure, viscosity and pH value.

These features are nowhere disclosed or suggested in Heidemann, Wasterby and Zahharov, alone or in combination. For example, Heidemann, Wasterby, Zahharov, and combination thereof do not disclose or suggest introducing magnetic particles into the examination area; generating a magnetic field to produce in the examination area two part-areas, including a first part-area having

a low magnetic field strength and a second part-area having a higher magnetic field strength than the low magnetic field strength; and correlating the change in the spatial distribution of the magnetic particles in the examination area with at least one a local concentration, temperature, pressure, viscosity and pH value

If the Examiner insists that these features are somehow disclosed or suggested in Heidemann, Wasterby and Zahharov, then the exact location of such disclosure, by page and line numbers, is respectfully requested.

Unlike the allegation on page 3 of the Final Office Action, the claims are not so broad as to "encompass any and every NMR and MRI spectroscopic technique that requires the use of spatial magnetic field gradients applied to spin 1/2 nuclei." Claim 1 specifically requires "introducing into the examination area magnetic particles ... and correlating the change in the spatial distribution of the magnetic particles in the examination area with at least one a local concentration, temperature, pressure, viscosity and pH value." Heidemann, Wasterby and Zahharov are completely silent about introducing magnetic particles into an examination area and correlating the change in the spatial distribution of the magnetic particles in the examination area with

a property of the examination area, namely, "at least one of a local concentration, temperature, pressure, viscosity and pH value," as recited in independent claim 1.

Accordingly, it is respectfully requested that independent claim 1 be allowed. In addition, it is respectfully submitted that claims 2-3, 5-17, 19 and 41-42 should also be allowed at least based on their dependence from independent claim 1 as well as their individually patentable elements. Accordingly, separate consideration of each of the dependent claims is respectfully requested.


For example, Heidemann, Wasterby, Zahharov and combination thereof, do not disclose or suggest "wherein the act of changing the magnetic field strength changes the magnetic field strength temporally in a first frequency band, and the detecting act includes detecting the signal in a second frequency band, the second frequency band including harmonics of signals in the first frequency band," as recited in claim 41; or "wherein the act of generating the magnetic field includes the act of first and second magnetic fields which change at different rates and with different amplitudes, wherein the first magnetic field changes slowly in time and with a higher amplitude relative the second magnetic field, and

the second magnetic field changes rapidly in time terms and with a lower amplitude relative the first magnetic field," as recited in claim 41. Again, if the Examiner insists that these features are somehow disclosed or suggested in Heidemann, Wasterby and Zahharov, then the exact location of such disclosure, by page and line numbers, is respectfully requested.

In addition, Applicant denies any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicant reserves the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

In view of the above, it is respectfully submitted that the present application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

Respectfully submitted,

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